

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Katsura OTAKI

Application No.: 09/780,414



7/ Pre-Am A  
G. Stanley  
7-23-01

Filed: February 12, 2001

Docket No.: 108598

For: POINT DIFFRACTION INTERFEROMETER, REFLECTION MIRROR, AND  
PROJECTION EXPOSURE APPARATUS

PRELIMINARY AMENDMENT

Director of the U.S. Patent and Trademark Office  
Washington, D. C. 20231

Sir:

Prior to initial examination, please amend the above-identified application as follows:

IN THE SPECIFICATION:

Page 1, line 5 to line 7, delete current paragraph and insert therefor:

C1  
The present invention relates to a point diffraction interferometer used for high precision measurement of a surface profile, a manufacturing method for a reflecting mirror, and a projection exposure apparatus.

Page 1, line 14 to line 18, delete current paragraph and insert therefor:

C2  
The integrated wave front aberration of the optical system used for X-ray lithography should be  $\lambda/14$  rms or less, and hence precision as high as 0.2 nmrms is required for the surface profile (machining precision) of each mirror. For machining with such a high precision, higher precision, for example, measurement precision as high as about 0.1 nmrms is required for surface profile measurement of the reflecting mirror.